

(10/708,668)

In The Specification:

In the Heading "Cross Reference to Related Applications", replace the paragraph as follows:

The present invention is related to U.S. Applications 10/708,669, 10/708,670, 10/708,671, 10/708,672, 10/708,673, 10/708,675, 10/708,676, 10/708,677, 10/708,679, 10/708,680, 10/708,681, 10/708,682, filed March 18, 2004, (Attorney Docket No. 81093810/FGT-1903 PA) entitled "Method and Apparatus of Controlling an Automotive Vehicle Using Brake Steer as a Function of Steering Wheel Torque"; (Attorney Docket No. 81093816/FGT-1904 PA) entitled "Method and Apparatus for Controlling an Automotive Vehicle Using Brake Steer and Normal Load"; (Attorney Docket No. 81093823/FGT-1905 PA) entitled "Method and Apparatus for Controlling Brake Steer in an Automotive Vehicle in Reverse"; (Attorney Docket No. 81093821/FGT-1906 PA) entitled "Method and Apparatus for Controlling Brake Steer in an Automotive Vehicle in a Forward and Reverse Direction"; (Attorney Docket No. 81093822/FGT-1907 PA) entitled "Method of Controlling an Automotive Vehicle Having a Trailer"; (Attorney Docket No. 81093826/FGT-1908 PA) entitled "Method of Controlling an Automotive Vehicle Having a Trailer Using Rear Axle Slip Angle"; (Attorney Docket No. 81093839/FGT-1909 PA) entitled "Method and Apparatus for Maintaining a Trailer in a Straight Position Relative to the Vehicle"; (Attorney Docket No. 81093840/FGT-1910 PA) entitled "Method and Apparatus for Predicting the Position of a Trailer Relative to a Vehicle"; (Attorney Docket No. 81093841/FGT-1911 PA) entitled "Method and Apparatus for Controlling an Automotive Vehicle in a U-Turn"; (Attorney Docket No. 81093842/FGT-1912 PA) entitled "Method and Apparatus to Enhance Brake Steer of a Vehicle Using a Controllable Suspension Component"; (Attorney Docket No. 81093843/FGT-1913 PA) entitled "Method and Apparatus for Controlling a Vehicle Using an Object Detection System and Brake Steer"; (Attorney Docket No. 81093849/FGT-1916 PA) entitled "Method and Apparatus for Controlling a Trailer and an Automotive Vehicle With a Yaw Stability Control System"; each incorporated by reference herein.

[0087] KW 5/3/07 Referring now to Figure 5, Figures 5, 5A and 5B, a perspective view of vehicle 10 having an alternative method for determining the relative position of the trailer 160 relative to the vehicle is illustrated. The vehicle is illustrated having a ball 175 that is positioned at or near the rear bumper 176 of the vehicle. In this embodiment, only two reverse aid sensors 48 are illustrated. However, various numbers of reverse aid sensors may be illustrated. Trailer tongue 161 has a locating plate 177 thereon. Locating plate may, for example, have a locating hole 178 aligned with the center of the tongue 161. In addition to or instead of locating hole 178, a locating opening 179 may be positioned on the locating plate.

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The locating plate 177 is fixedly attached to the trailer or tongue 161 so that the locating hole 178 and/or the locating opening 179 is centered with the tongue. The reverse sensing system detects the position of either the locating hole 178 or locating opening 179. Thus, the relative position of the trailer may be determined using the reverse aid sensors 48. The reverse aid sensors 48 generate signals and locate the position of the locating hole. The display 68 described above in Figure 3 may generate a screen display or audible display based on the position of the locating plate and thus the tongue 161 relative to the vehicle. Thus, while backing the vehicle 10 to attached the trailer thereto, the ball 175 may be more easily aligned with the trailer hitch 172. To summarize, a method for aligning a vehicle includes driving the vehicle in a reverse direction and sensing the position of a locating plate or a locating guide such as the hole 178 or opening 179. An indicator may be generated in the vehicle corresponding to the position of the trailer hitch or tongue relative to the vehicle. The vehicle could be automatically brake-steered or braked to cause alignment of the ball on the vehicle to the hitch on the trailer.

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[0086] Yet another method of determining the alignment of the trailer with respect to the vehicle is as follows. The ball hitch 175 has a shallow square hole H1 at its top into which fits a mating spring-loaded rod and corresponding spring S1 on the trailer ~~coupler~~ hitch 172. (The spring-loading prevents damage to the rod R1 and hole if the hitch is coupled with the rod R1 and hole out of alignment.) The rod R1 is connected to a potentiometer P1 or optical rotation sensor affixed to the trailer ~~coupler~~ hitch 172. When the vehicle turns relative to the trailer, the potentiometer or optical rotation sensor is rotated, providing a measurement of the relative vehicle-trailer angle.